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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/945,354	08/31/2001	Agathagelos Kyrldis	00124CIP (3600-312-01)	1450
33432	7590	08/30/2005	EXAMINER	
KILYK & BOWERSOX, P.L.L.C. 53 A EAST LEE STREET WARRENTON, VA 20186			PHASGE, ARUN S	
			ART UNIT	PAPER NUMBER
			1753	

DATE MAILED: 08/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/945,354

**Applicant(s)**

KYRLIDIS ET AL.

**Examiner**

Arun S. Phasge

**Art Unit**

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-83 is/are pending in the application.
- 4a) Of the above claim(s) 11-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 16-83 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10, 16 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Funkenbusch et al. (Funkenbusch), U.S. Patent 5,182,016.

Funkenbusch discloses the claimed chromatography column having a stationary and mobile phases, wherein the stationary phase comprises carbon-clad metal oxide particles having coated thereon at least one organic groups or polymer (see abstract). The dictionary defines "attached" as "to make fast or adhere". The coating of the polymer onto the particle would necessary include the limitation "attached", since the coating of the particle would require the coating to adhere onto the particle.

The reference further discloses the other types of chromatography, such as size exclusion, affinity chromatography, adsorption-desorption chromatography or

reverse phase chromatography (see col. 11, lines 46-64). The reference further discloses the use of polyethylene glycol as the organic group (see col. 11, line 54-55). The reference further discloses the use of alkyl group attached to the particle (see col. 12, lines 25-28). The patent further discloses the use of benzene, which would read on the aromatic group (see col. 12, lines 25-28).

Thus, since the Funkenbusch patent discloses each and every limitation, the claims are anticipated.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 17-20, 22-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funkenbusch as applied to claims above, and further in view of Belmont, U.S. Patent 5,182,016.

The Funkenbusch patent while disclosing the use of carbon particles having a coating (and thus the attachment of the organic compound) of the carbon particle, does not disclose the particulars of the organic compound or the attachment of a second organic group to the carbon particle.

The Belmont patent is cited to teach the carbon particle having a variety of organic groups attached to carbon (see Abstract). The variety of groups includes the presently claimed organic groups (see col. 5, line 30 to col. 7, line 54). The patent further teaches that the carbon product having the attached organic group can be used in same applications as the untreated carbon material, with the organic groups modifying and improving the properties of the carbon (see col. 7, lines 56-66). The reference further discloses more than one attachment of the organic groups (see col. 5, lines 55-59).

Consequently, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the disclosure of the Funkenbusch patent to attach other organic groups to the carbon particle, because the Belmont patent teaches that other organic groups can be attached to the carbon to control the properties of the carbon particle. The size of the second organic group would have been obvious to one having ordinary skill in the art given the teaching of Belmont about steric hinderance (col. 5, lines 55-58).

#### *Double Patenting*

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See

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*In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-10, 16-83 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of copending Application No. 09/654,182 in view of Funkenbusch applied as above. The prior application fully encompasses the claims of the present invention (see claims 1-10, 16-49).

The reference fails to disclose that the carbon-clad metal oxide particles are attached to a carbon-clad metal oxide particles.

The Funkenbusch patent is cited to show the use of carbon clad metal oxide particles, which have attached the polymeric materials claimed (see abstract and claims 1-31).

Accordingly, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the claims of

the prior application with the teachings of the Funkenbusch patent, because the Funkenbusch patent teaches that carbon-clad metal oxide particles can be used as the separation materials in a chromatography apparatus.

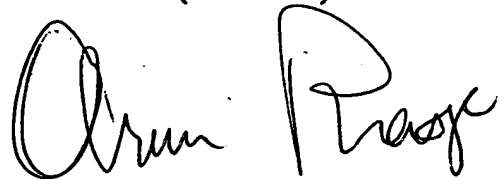
This is a provisional obviousness-type double patenting rejection.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun S. Phasge whose telephone number is (571) 272-1345. The examiner can normally be reached on MONDAY-THURSDAY, 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Arun Phasge', with a large, stylized 'P'.

Arun S. Phasge  
Primary Examiner  
Art Unit 1753

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